

REMARKS

This paper is responsive to the Final Office Action dated June 4, 2003, having a shortened statutory period set to expire on September 4, 2003 in which,

Claims 1-19, 21-35, 37-70 and 73-91 were pending; and

Claims 1-19, 21-35, 37-70 and 73-91 were rejected.

No claims have been added or canceled in the present response. Claims 1, 33, 37, 38, 69, and 73-75 have been amended. Accordingly, claims 1-19, 21-35, 37-70 and 73-91 remain currently pending in the present application.

Rejection of Claims under 35 U.S.C. §102

In the present Office Action, claims 49, 59-70, 73-78, and 87-91 were rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 4,441,093 issued to Okazaki. (hereinafter, "**Okazaki**"). While not conceding that any of the Examiner's cited references qualify as prior art, but instead to expedite prosecution, Applicants have chosen to traverse the Examiner's rejections as follows. The following arguments are made without prejudice to Applicants' right to establish, for example in a continuing application, that one or more of the cited references do not qualify as prior art with respect to an invention embodiment currently or subsequently claimed.

With respect to Applicants' claim 49, the present Office Action states that,

Okazaki discloses a fuse assembly (Fig. 5, 6) comprising: a fuse element (12) prepared in a substantially non-linear form, the fuse element comprising at least two terminals (11), the at least two terminals (11) comprising a first terminal and a second terminal; and a fuse body comprising a dielectric material (14, 15) adapted to substantially enclose the fuse element (12) between the at least two end terminals (11), and means (a portion (15) of said dielectric material (14, 15)) for increasing dielectric separation to impede the arcing (inherently), wherein said means (15) for increasing said dielectric separation is separated from said fuse element (12) by a space (accommodating the portion (14) of the dielectric material) along a length of said fuse element (12).

Applicants respectfully disagree. Applicants respectfully submit that claim 49 (previously presented) recites,

A fuse comprising:

a fuse element prepared in a substantially non-linear form, wherein at least a portion of the fuse element is capable of experiencing arcing as a result of excessive current flowing through the fuse element;
means for increasing a dielectric separation to impede the arcing, wherein said means for increasing said dielectric separation is separated from said fuse element by a space along a length of said fuse element.

and fails to recite, a fuse element “comprising at least two terminals (11), the at least two terminals (11) comprising a first terminal and a second terminal; and a fuse body comprising a dielectric material (14, 15) adapted to substantially enclose the fuse element (12) between the at least two end terminals (11)” as indicated by the Examiner.

Moreover, Applicants respectfully submit that *Okazaki* fails to teach, show, or suggest, “means for increasing a dielectric separation to impede the arcing” as required by Applicants’ claim 49 and generally required by Applicants’ claim 69. Particularly where the described means is construed to cover the corresponding structure, material, or acts described in Applicants’ specification and reasonable equivalents thereof.

Okazaki teaches a thermal fuse which comprises a coiled spring interposed in a stretched condition between two opposed conductors in such a fashion that the spring is imparted with tension and is soldered by a fusible alloy having a specified fusing point. According to the teaching *Okazaki* the coiled spring is cut at one portion so that a circuit between the two conductors is broken upon fusing of the fusible alloy due to the action of the coiled spring. (*Okazaki*, Abstract) While *Okazaki* discusses the speed with which disconnection via the fuse occurs, weather and moisture resistance (see *Okazaki* Column 1, Lines 15-17), and the prevention of the physical reconnection of fuse conductors (see *Okazaki* Column 3, Lines 8-16), Applicants can find nothing within *Okazaki* which references arcing or “means for increasing a dielectric separation” to impede arcing as claimed by Applicants.

Figure 5 of *Okazaki* shows an embodiment in which a coiled spring bent into a U-shape is interposed between two conductors in parallel such that, “the spring is imparted

with elasticity which is necessary for opening the circuit.” (*Okazaki*, Column 2, Lines 60-61) and that, coupled with a thermoplastic synthetic resin layer, “there is formed a hollow of such a size that the cut two coiled spring portions and the conductors in parallel are prevented from re-connection due to melting of the thermoplastic synthetic resin layer.” (*Okazaki*, Column 3, Lines 12-16) The embodiment of Figure 5 of *Okazaki* is therefore distinguished from the embodiments of Figures 1-4 in which “fused” or melted fusible metal may contact and re-connect the conductors after the circuit therebetween is initially broken.

Applicants respectfully submit that no cited portion of the Examiner’s cited reference teaches, “means for increasing a dielectric separation to impede the arcing” as required by Applicants’ claims. Applicants therefore respectfully submit that claims 49 and 69, and all claims depending therefrom, are allowable over the Examiner’s cited reference *Okazaki*.

Rejection of Claims under 35 U.S.C. §103

Claims 1-19, 21-35, 37-48, 50-58 and 71-86 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Okazaki* in view of United States Patent No. 5,572,181 issued to Kiryu et al. (hereinafter, *Kiryu*). While not conceding that any of the Examiner’s cited references qualify as prior art, but instead to expedite prosecution, Applicants have chosen to traverse the Examiner’s rejections as follows.

With respect to Applicants’ claim 1 the present Office Action states that,

Okazaki disclosed a fuse assembly (Fig. 5, 6) comprising: a fuse element (12) prepared in a substantially non-linear form, the fuse element comprising at least two terminals (11), the at least two terminals (11) comprising a first terminal and a second terminal; and a fuse body comprising a dielectric material (14, 15) adapted to substantially enclose the fuse element (12) between the at least two end terminals (11), wherein at least a portion (15) of the dielectric material (14, 15) is positioned between an area bounded by said fuse element (12) in a substantially non-linear form and a line connecting two ends of the fuse element (12), and the fuse element (12) is separated from said portion of the dielectric material (15) by a space (accommodating a portion (14) of the dielectric material) along a length of said fuse element (12), but did not disclose that said end terminals (11) are connected to the endcaps.

Kiryu disclosed a fuse assembly (Fig. 3), wherein a fuse element (3) is connected to the two end caps (2) for the purpose of the convenient installation in a power distribution conductor on a circuit board (column 6, lines 48+).

The present Office Action further states that,

It would have been obvious to a person of ordinary skill in the fuse art at the time of the invention to provide said fuse assembly of Okazaki with the end caps as taught by Kiryu in order to adapt said fuse assembly of Okazaki for a convenient installation in a power distribution conductor on a circuit board.

Applicants respectfully disagree. Applicants submit that the Examiner has failed to provide sufficient suggestion or motivation for the combination of *Okazaki* and *Kiryu*. Applicants note that it is impermissible within the framework of 35 U.S.C. §103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what the reference fairly suggests to one of ordinary skill in the art and further that the Examiner may not use the claimed invention as an instruction manual or template to piece together the teachings of the prior art so that the claimed invention is rendered obvious.

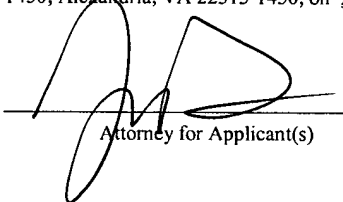
Moreover, as discussed herein with respect to Applicants' claims 49 and 69, Applicants respectfully submit that neither of the Examiner's cited references teach, show, or suggest, "a fuse body comprising a dielectric material...wherein at least a portion of the dielectric material is positioned...to impede arcing across the fuse element" as required by Applicants' claim 1 and generally required by Applicants' claim 33. Applicants therefore submit that claims 1 and 33, and all claims depending therefrom, are allowable over the Examiner's cited references *Okazaki* and *Kiryu*.

With respect to Applicants' claim 18 the present Office Action states that, "...the method steps recited in the claims are inherently necessitated by the device structure as disclosed by Okazaki in view of Kiryu." Applicants respectfully disagree. As an initial matter, Applicants note that no "steps" are recited within claim 18. Applicants further submit that neither *Okazaki* nor *Kiryu* teach, show, or suggest, "adjusting distance between the first terminal and the second terminal" to reduce a fuse element footprint as claimed (Applicants' claim 18) Applicants therefore respectfully submit that claim 18,

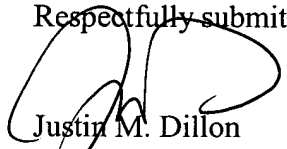
and all claims depending therefrom, are allowable over the Examiner's cited references *Okazaki* and *Kiryu*.

CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5080.

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| I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on <u>August 4, 2003</u> . | |
|  _____ Attorney for Applicant(s) | <u>8-4-03</u> _____ Date of Signature |

Respectfully submitted,


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